Zero Carbon Lithium™
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COMPETENT PERSON STATEMENT
The information in this report that relates to Mineral Resources is extracted from the ASX announcement made by Vulcan on the 31 August 2020, which is available on www.v-er.com. The information in this presentation that relates to the Scoping Study for the Vulcan Lithium Project is extracted from the ASX announcement “Positive Scoping Study – Vulcan Zero Carbon Lithium Project”, released on the 21st of February 2020 which is available on www.v-er.com. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and that all material assumptions and technical parameters underpinning the estimates in the relevant market announcements continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person’s findings are presented have not been materially modified from the original market announcements.
Vulcan – Zero Carbon Lithium™

High Carbon Footprint Of Existing Supply Chain

World-first Zero Carbon Lithium™ Project

DLE & Geothermal in Germany

Dual Revenue Lithium & Green Energy

In The Heart Of The Fastest Growing Lithium Market In The World

Largest Lithium Resource In Europe

Rapidly Advancing Lithium Project

Agreement with German Geothermal Operator

Team of World Leading Experts

Project Financially Supported by the EU
We exist to decarbonize the currently high carbon production footprint of lithium-ion batteries used in electric vehicles by producing a world-first Zero Carbon Lithium™ hydroxide product from our geothermal lithium brine project in the Upper Rhine Valley, Germany.

Lithium is a critical resource for batteries and electric vehicles. To fully electrify our cars with lithium-ion batteries, we need lithium.

Using the current main source of producing and refining lithium, from hard-rock mines, will emit approximately 1.05 billion tonnes* of CO₂ to fully electrify the world's passenger vehicles.

That's equivalent to the annual emissions of the UK, France and Italy combined.

*See Appendices for calculations
Environmental concerns

Lithium extraction in South America evaporates large quantities of water in one of the driest places on earth. This stresses the environment and local communities.

I. ENVIRONMENTAL IMPACT

Hard rock mines for lithium are unpopular. Once you mine it, the rock has to be roasted with fossil fuels to produce lithium hydroxide. This is very CO2-intensive.
Carbon intensity

I. ENVIRONMENTAL IMPACT

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*See Minviro LCA Study, The CO₂ Impact of the 2020s Battery Quality Lithium Hydroxide Supply Chain
Vulcan to offset CO₂ penalties for automakers

CO₂ Emissions Linked to Lithium Production

**Hard Rock Mining**

- 675kg CO₂ per EV From Lithium Production

**Vulcan Zero Carbon**

- 238kg CO₂ per EV From Lithium Production

**VW’s target: 28M EVs by 2028**

**Carbon Footprint**

Penalties currently only target vehicles’ emissions but not their supply chain. This is likely to change shortly with new EU legislation and lead to heavy penalties if carmakers are not sourcing greener raw materials.

Vulcan’s Zero Carbon Lithium™ offers a negative carbon footprint that will help automakers to reach their sustainability targets by offsetting CO₂ generated by the rest of their supply chain.

Average Battery Pack: 50KWh, Average LCE per KWh: 0.9kg, Average LCE consumption per EV: 45kg, Vulcan: -5.3t of CO₂ per ton of LiOH, Average Hard Rock operation with Chinese Converter: 15t of CO₂ per ton of LiOH
Energy transition – the fossil-nuclear era in Europe coming to an end

II. EUROPE

Europe is aiming for carbon neutrality, but the EU’s energy transition is far from being complete:

- **Renewable Energy (RE)**
  - 30.7% RE in Power
  - 19.5% RE in Heat
  - 7.6% RE in Transport

- **Oil**
  - Combustion engine bans in France, Belgium, Ireland and the Netherlands
  - Diesel bans and low emission zones in over 260 cities in more than 20 member states
  - Combustion engine phase-out in UK

- **Nuclear**
  - Nuclear phase-out in Germany, Spain and Belgium, reduction of nuclear capacities in France

- **Coal**
  - Coal phase-out by 75% of European member states, among them Spain, France, UK and Italy
  - Coal phase-out in Germany

- **Gas**
  - Bans for fossil heating systems + incentive schemes for low carbon heating across EU Member States

- **EVs and Lithium-Ion Batteries**
  - Demand for low-carbon solutions in transport sector

- **Geothermal Energy**
  - Demand for low-carbon dispatchable generation capacity
  - Demand for low-carbon heat
Europe is undergoing a once-in-a-lifetime switch to electric vehicles. This has made it the fastest growing lithium-ion battery production centre in the world. It has ZERO local supply of lithium hydroxide to feed this demand. 80% of global supply is controlled by China. The EU will tax lithium-ion batteries based on their carbon footprint: a “CO₂ Passport”. European auto-manufacturers want to produce Zero Carbon EVs. No low-carbon or low-water source of lithium currently exists.

“Volkswagen’s delivery promise: CO₂-neutral production including supply chain”

Volkswagen Presentation, ID Insights, Sustainable Mobility, 2019
Location: centre of fastest growing lithium market

Vulcan’s negligible distance to markets is a cost advantage as well as carbon advantage

II. EUROPE

Brandenburg, 2021
CAPACITY UNKNOWN

Salzgitter, 2024
16 GWh, LATER 24 GWh

Erfurt, 2022
14 GWh LATER 100 GWh

Sunderland, 2010
2.5 GWh

Willstät, 2020
1 GWh

Germany & France, 2022
16 GWh, LATER 64 GWh

Germany, 2023
20 GWh, LATER 24 GWh

Germany, 202X
4 GWh, LATER 8 GWh

Mo I Rana, 2023
RAMP UP TO 32 GWh

Skellefteå, 2021
32 GWh LATER 40 GWh

Brandenburg, 2021
RAMP UP TO 8-12 GWh

Bitterfeld, 2022
10 GWh

Wroclaw, 2018
6 GWh, LATER 70 GWh

Nysa, 2021
CATHODE MATERIALS

Nysa 2020
CATHODE MATERIALS

Komaron 1 + 2, 2020
7.5 GWh, LATER 23.5 GWh

Göd, 2018
3 GWh, LATER 15 GWh

Europe, 202X
CAPACITY UNKNOWN
Vulcan Energy target market

Vulcan will capitalize on the fastest growing lithium market in the world, which has zero local supply. By 2029, Europe will require >0.4Mt of Lithium Hydroxide. Future growth possible for Vulcan: not resource constrained.
EIT InnoEnergy will marshal its ecosystem and significant EU-wide resources to launch the Zero Carbon Lithium™ Project forward:

- **Securing project funding**, including the use of applicable EU, national or regional grant schemes, and liaising with EU project finance and development banks.
- Driving relationships with European lithium offtakers, aimed at entering into binding offtake agreements.
- **Obtaining and fast-tracking necessary licenses**.
- All services are entirely success-based, with no upfront cost to Vulcan.

May ‘20: Agreement signed with EU-backed body to launch Vulcan Zero Carbon Lithium™ Project
A perfect fit for the European Green Deal

II. EUROPE

- Mobilising research and fostering innovation
- A zero pollution ambition for a toxic-free environment
- Mobilising industry for a clean and circular economy
- Supplying clean, affordable and secure energy
- Increasing the EU's Climate ambition for 2030 and 2050
- Preserving and restoring ecosystems and biodiversity
- From 'Farm to Fork': a fair, healthy and environmentally friendly food system
- Accelerating the shift to sustainable and smart mobility
- Building and renovating in an energy and resource efficient way
- Financing the transition
- Leave no one behind (Just Transition)
- The EU as a global leader
- A European Climate Pact
We scoured the globe to find the right project

We had the lithium expertise to know that Zero Carbon Lithium production was possible using modern extraction methods, provided a deep geothermal brine reservoir could be found that had the following geological conditions:

1. Renewable heat;
2. High lithium grades;
3. High brine flow rate.

Our research showed that this could be done in just two places:

1. The Upper Rhine Valley in Germany, and
2. The Salton Sea in California

We chose Germany and Europe.

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For details on lithium grades, see Appendices
Birth of the Vulcan project

### III. OUR PROJECT

#### Core Market
- **Zero Carbon Lithium™**
- **Lithium™**
- **Zero Carbon Heating**
- **Zero Carbon Electricity**

**Market Demands in EU & Germany**

**Vulcan value propositions & revenue streams**

#### Secondary Market
- **Zero Carbon Lithium™**
- **VULCAN ENERGY Zero Carbon Lithium™**

### A PERFECT FIT

1. Wells drilled into underground aquifers pump hot lithium-bearing brine to the surface.
2. Heat from the brine powers turbine creating electricity which is then put back into the grid.
3. Lithium hydroxide produced, bagged then distributed for Cathode Production in EU.
4. Re-injection of spent brine several kilometers away.
Largest in Europe

III. OUR PROJECT

We used our geological expertise to pick out the best areas in the Upper Rhine Valley for sub-surface lithium grade and potential flow rate. We secured exclusive rights to these areas:

- Very large license package >800km²
- 6 licenses: 3 exploration permits granted
- Largest lithium resource in Europe: 15.37Mt LCE

CONTAINED LITHIUM (JORC RESOURCE, MT LCE)

<table>
<thead>
<tr>
<th>Country</th>
<th>Company</th>
<th>Contained Lithium (Mt LCE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAC</td>
<td>ARGENTINA</td>
<td>20.6</td>
</tr>
<tr>
<td>AVZ</td>
<td>D.R.CONGO</td>
<td>16.3</td>
</tr>
<tr>
<td>VUL</td>
<td>GERMANY</td>
<td>15.37</td>
</tr>
<tr>
<td>GXY</td>
<td>ARGENTINA</td>
<td>9.1</td>
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<tr>
<td>PLS</td>
<td>AUSTRALIA</td>
<td>6.97</td>
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<tr>
<td>ORE</td>
<td>ARGENTINA</td>
<td>5.8</td>
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</tbody>
</table>

Image shows resources collated from companies at different stages of development as detailed in Appendix 3, with Vulcan Lithium Project which is a mixture of Indicated and Inferred Mineral Resources as per VUL ASX announcement 31/08/2020. The Company is not aware of any new information or data that materially affects the information included in the announcement. All material assumptions and technical parameters underpinning the Mineral Resource in the relevant announcement continue to apply and have not materially changed.
III. OUR PROJECT

Our process replicates existing operations taking place commercially across the world. What is unique about us is the combination of those different steps.

1. **Binary Cycle Geothermal Plant**
   - Hundreds of geothermal energy plants running **globally**
   - 37 deep geothermal energy plants in operation in **Germany**
   - **Upper Rhine Valley** well-known area for successful geothermal operations
   - Team of **leading experts** in developing and permitting geothermal plants

2. **Direct Lithium Extraction Plant**
   - Direct Lithium Extraction commercially used for decades
   - Now operating in **China & Argentina** – accounting for >10% of global lithium production
   - Adsorbent-type DLE technologies **commercially available** from several suppliers
   - We’ve achieved >90% **lithium recoveries** from initial test work

3. **Lithium Refining Plant**
   - Conversion of lithium chloride to lithium hydroxide is an **industry-standard route**
   - There are operational plants worldwide doing this
Our Zero Carbon Lithium™ Process

IV. DIRECT LITHIUM EXTRACTION

1. Hot brine is extracted from the ground and generates steam that powers turbines and produces renewable electricity
   - They are standard geothermal production wells successfully implemented for decades
   - We divert the brine flow and extract lithium from the solution with a Direct Lithium Extraction (DLE) process
   - Commercially used for decades (Argentina) & successfully tested in the US and elsewhere
   - Once the lithium has been extracted, the brine is reinjected in the ground
   - No evaporation losses, only takes a few hours, not dependent on weather
   - Lithium chloride is sent to the lithium refining plant which will be converted LiCl to battery quality LiOH
   - Water is recycled, no toxic wastes, no gases are emitted, heat and power from the geothermal plant, no fossil fuels are burned
   - Expected to have a very low Opex

2. Conventional Organic Rankin Cycle Geothermal Energy Plant
   - Geothermal Brine (165°C)
   - Geothermal Brine (65°C)
   - Spent Brine For Re-Injection
   - Zero Carbon Heat & Power
   - Lithium Stream
   - Direct Lithium Extraction (DLE)

3. Brine Conditioning
   - Feed Brine

4. Lithium Refining Plant
   - Lithium Stream
   - Vulcan has IP protection around flowsheet and trademark
   - Zero Carbon LiOH•H₂O

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DLE technologies paired with geothermal brines have a number of major advantages compared to South American brines, including:

1. Extraction rate and efficiency **does not depend on weather**
2. Up to **90% lithium extraction** compared to 30-50% for evaporation pond systems
3. **Lead time** to production is hours or days instead of months for brine ponds
4. The concentration of Mg, Ca, and SO\(_4\) in the brine matters less than for evaporative processes
5. Ability to produce **consistent chemical product** for battery industry.
6. **Loss of water** from brine **is eliminated**
7. **No need for natural gas**, solution is already hot and heat & power from geothermal plant
8. **Minimal footprint** required for processing compared to evaporation ponds so brine remains in its undisturbed natural state

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**Lithium exploitation is drying out the world’s driest desert**

The *Atacama* Desert in Chile, the world’s driest desert, is gradually losing its last water resources. Indigenous communities have been sounding the alarm for several years and are now being strengthened by scientific research and environmental organisations. Cause of this dehydration? Lithium mining.

### The Vulcan Advantage: Size, Grade, Heat & Jurisdiction

#### IV. DIRECT LITHIUM EXTRACTION

<table>
<thead>
<tr>
<th></th>
<th>Controlled Thermal Resources</th>
<th>Standard Lithium</th>
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<tr>
<td>Size (Mt LCE)</td>
<td>15.37</td>
<td>2.7</td>
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<tr>
<td>Grade (mg Li/L)</td>
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<td>181</td>
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<tr>
<td>Renewable Heat Source?</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Jurisdiction Risk</td>
<td>Low</td>
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</tr>
<tr>
<td>Stage</td>
<td>Scoping Study Completed</td>
<td>PEA completed</td>
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<tr>
<td>Market Capitalization</td>
<td>$61m</td>
<td>$120m</td>
</tr>
<tr>
<td></td>
<td>n/a (private)</td>
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If you’re producing battery-quality lithium hydroxide chemicals, the price environment is strong. Lithium hydroxide is currently selling for around US$11-14,000/t. It is widely tipped to rise even from here due to looming deficits.

Brine projects are the lowest cost method of lithium hydroxide production, typically around US$5-7,000/t. (Source: Canaccord).

Our added advantages:
- **Free heat** to drive our process
- **Short distance** to market
- **Premium product**
- We also **sell energy**

Germany has a **fixed price** of €0.25c/kWh for the renewable electricity we can produce.

We plan to have **two revenue streams**: lithium and energy.

They de-risk and complement each other.
The Vulcan Zero Carbon Lithium™ team: Board

**V. TEAM & TIMELINE**

**MANAGING DIRECTOR & FOUNDER-CEO**
- Founder of Vulcan Zero Carbon Lithium™ Project. Lithium industry executive since 2014. Previously Executive Director of ASX-listed Exore Resources Ltd.
- Three discoveries of JORC Lithium Resources on two continents including Lynas Find, now part of Pilbara Minerals’ Pilgangoora Project in production (ASX:PLS).
- Management & Executive experience in resources sector on four continents; bilingual; dual Swedish & Australian nationality.
- PhD & BSc (Hons) in Exploration Geology & MBA in Renewable Energy.

**CO-FOUNDER & EXECUTIVE DIRECTOR – GEOTHERMAL EXPERT**
- Successful geothermal project development & permitting in Germany and worldwide.
- Widespread political, investor and industry network in Germany and Europe.
- Based in Karlsruhe, local to the project area in the Upper Rhine Valley.

**CHAIR – INVESTMENT BANKING EXPERT**
- Executive Chair/CEO positions of two companies that grew from start-ups to the ASX 300. Extensive international investment banking experience.
- Investment banking Director of HSBC with senior multi-regional roles in investment banking, legal and compliance functions.
- Currently Chair of Resource and Energy Group and principal of Viaticus Capital.
- Previously Non-Executive Director of Iluka Resources, Alexium International Group and Rowing Australia.

**NON-EXECUTIVE DIRECTOR – COMMUNICATIONS EXPERT**
- Founder of Impact Group International. A communications strategist, focused on amplifying the work of companies that have a positive social or environmental impact.
- Experience in working across media markets and for high profile people, including one of Australia’s leading philanthropists, Andrew Forrest and Australia’s then Foreign Minister and former Prime Minister, Kevin Rudd.
- Was personally behind the global launches of the Walk Free Global Slavery Index, which reached more than 1 billion people.

**CFO / COMPANY SECRETARY**
- Chartered Accountant and Chartered Secretary with +20 years experience.
- Experience in financial and commercial management including in corporate governance, debt and capital raising, tax planning, risk management, treasury management, insurance, corporate acquisitions and divestment and farm in/farm out transactions.
- BComm degree from Curtin University, a Grad Dip in Applied Corporate Governance from the Governance Institute of Australia and a Grad Cert of Applied Finance and Investment from the Securities Institute of Australia.

**DR. FRANCIS WEDIN**
- Dr. Horst Kreuter
- GAVIN REZOS
- RANYA ALKADAMANI
- ROB IERACE
Management, Technical Team & Consultants

**V. TEAM & TIMELINE**

### LITHIUM PROJECT MANAGER
- Awarded her PhD on lithium chemistry magna cum laude (with great distinction) at the University of Bonn.
- Most recently focused on lithium extraction from geothermal brine at the California Energy Commission (CEC). Participates in “California Lithium Valley” initiative.
- Prior to joining the CEC, she conducted research developing and characterizing new electrode materials for lithium-ion batteries.
- Unique combination of expertise in lithium chemistry and lithium extraction from geothermal brine.

### LITHIUM CHEMICAL ENGINEERING LEAD
- Chemical engineering expert part of Vulcan’s team in Karlsruhe. 25 years’ experience in chemical process innovation and industrial scale-up across a range of industries.
- Awarded a PhD and MSc in Chemical Engineering from the world-renowned Karlsruhe Institute of Technology (KIT), Dr. Aicher was also a visiting scientist at the Massachusetts Institute of Technology (MIT).
- Dr. Aicher was Head of Group at Fraunhofer Institute, one of the most prestigious organizations of applied sciences in Europe, and Process Engineer at Fortune 500 engineering company Fluor Inc.

### VICE PRESIDENT – BUSINESS DEVELOPMENT
- Previously Executive Director at Infinity Lithium, where Vincent led the project to become the first to secure EU funding. Vincent was also appointed as a Lithium Expert by the European Commission.
- Previously worked at IHS Markit where he led the lithium and battery materials research team covering the entire industry’s supply chain from raw materials to E-mobility.
- Earlier in his career, he worked for Talison Lithium located in Perth, Australia. He also worked for Roskill, an international metals & minerals research and consulting company.
- Mr Ledoux-Pedailles is a regular speaker at various industry events across the world presenting at chemical, mining, and energy related conferences.

### DLE TECHNOLOGY EXPERT
- Co-founded Lilac Solutions, one of the world’s leading direct lithium extraction technology companies, which raised $20M from Bill Gates’s Breakthrough Energy Ventures.

### GEOTHERMAL PLANT ENGINEERING EXPERT
- Expert in geothermal and drilling technology, with more than 25 years of professional experience.

### ELITE TEAM & TIMELINE

<table>
<thead>
<tr>
<th>Role</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. Katharina Gerber</td>
<td></td>
</tr>
<tr>
<td>Dr. Thomas Aicher</td>
<td></td>
</tr>
<tr>
<td>Vincent Ledoux Pedailles</td>
<td></td>
</tr>
<tr>
<td>Alex Grant</td>
<td></td>
</tr>
<tr>
<td>Thorsten Weimann</td>
<td></td>
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<tr>
<td>GEOLOGIST</td>
<td>Elke Zimmermann</td>
</tr>
<tr>
<td>SENIOR GEOCHEMIST</td>
<td>Dr. Michael Kraml</td>
</tr>
<tr>
<td>SENIOR GEOLOGIST</td>
<td>Dr. Jens Grimmer</td>
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<tr>
<td>SENIOR GEOLOGIST</td>
<td>Tobias Hochschild</td>
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<td>SENIOR GEOLOGIST</td>
<td>Dr. John Reinecker</td>
</tr>
<tr>
<td>CHEMICAL PROCESSING EXPERT</td>
<td>Prof. Dr. Gerald Ziegenbalg</td>
</tr>
</tbody>
</table>
Where to from here?

V. TEAM & TIMELINE

SCOPING STUDY
We completed our Scoping Study in just six months, using our in-house team and world-renowned consultants. It was highly positive.

PRE-FEASIBILITY STUDY
We have commenced our Pre-Feasibility Study (PFS). We’ve successfully completed bench-scale processing test work as part of this.

DEFINITIVE FEASIBILITY STUDY
In 2021 we want to complete our Definitive Feasibility Study (DFS). We can take that to the bank.

SCALE-UP
We are then planning a stepwise scale-up to full commercial production capacity.

GROWTH WITH MARKET
We plan to grow with the European Electric Vehicle market in the 2020s. We have a very large resource. If we want to produce more lithium, we can drill more wells.

2019-20
2020
2021
2023-24
**Share Price & Capital Structure**

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**V. TEAM & TIMELINE**

**ASX : VUL**

<table>
<thead>
<tr>
<th>Details</th>
<th>Value</th>
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<tr>
<td>Shares on Issue</td>
<td>68,957,056</td>
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<tr>
<td>Options (28.5c expiring in January 2021)</td>
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<tr>
<td>Performance Milestone Shares*</td>
<td>8,800,000</td>
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<tr>
<td>Performance Rights*</td>
<td>4,250,000</td>
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<tr>
<td>Market Capitalization at 89c (undiluted)</td>
<td>~$61.0M</td>
</tr>
<tr>
<td>Enterprise Value at 89c (undiluted)</td>
<td>~$55.0M</td>
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<tr>
<td>Cash Position</td>
<td>~$6.0M</td>
</tr>
<tr>
<td>Top 20 Shareholders</td>
<td>~50%</td>
</tr>
<tr>
<td>Management (undiluted)</td>
<td>~22%</td>
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</tbody>
</table>

**Frankfurt: 6KO**

*Refer ASX Announcement 10 July 2019 for further details.*
Vulcan summary: best-in-class for the 2020s

<table>
<thead>
<tr>
<th>1</th>
<th>WORLD’S 1ST &amp; ONLY ZERO-CARBON LITHIUM™ PROCESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Purpose-built process to be uniquely Zero Carbon.</td>
<td></td>
</tr>
<tr>
<td>• Co-generation of geothermal energy from production wells will power lithium extraction.</td>
<td></td>
</tr>
<tr>
<td>• Negative CO₂/t LiOH, decarbonising the grid while producing lithium, compared with ~15 tonnes CO₂ for hard-rock.</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>2</th>
<th>POSITIVE SCOPING STUDY: DUAL REVENUE POTENTIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>• First of its kind study completed with international team of independent experts.</td>
<td></td>
</tr>
<tr>
<td>• Principal revenue potential from selling battery-quality LiOH H₂O chemicals into the European market.</td>
<td></td>
</tr>
<tr>
<td>• Secondary revenue potential from planned renewable geothermal power generation, benefits from Feed-in-Tariff.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3</th>
<th>EU BACKING FOR PROJECTS</th>
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<tr>
<td>• Agreement signed in May ’20 with EU-backed EIT InnoEnergy</td>
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</tr>
<tr>
<td>• EIT InnoEnergy will marshal its ecosystem and significant EU-wide resources to launch the Zero Carbon Lithium™ Project forward</td>
<td></td>
</tr>
<tr>
<td>• Assistance with securing funding and streamlining project permitting.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4</th>
<th>SIZE &amp; QUALITY: EUROPE’S LARGEST LITHIUM RESOURCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>• JORC Mineral Resource Estimate¹ 15.37 Million Tonnes LCE Indicated &amp; Inferred.</td>
<td></td>
</tr>
<tr>
<td>• One of the largest lithium resources in the world.</td>
<td></td>
</tr>
<tr>
<td>• High Li grades for geothermal brine which has readily available heat &amp; power.</td>
<td></td>
</tr>
<tr>
<td>• Large enough to be Europe’s primary source of battery-quality lithium hydroxide.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5</th>
<th>LOCATION CENTRE OF FASTEST GROWING MARKET</th>
</tr>
</thead>
<tbody>
<tr>
<td>• EU fastest growing lithium market in the world. Unprecedented demand forecast from growth in EVs.</td>
<td></td>
</tr>
<tr>
<td>• Located in Germany, in the centre of the industry.</td>
<td></td>
</tr>
<tr>
<td>• Zero local supply of battery quality lithium hydroxide.</td>
<td></td>
</tr>
<tr>
<td>• Removes dependence on China for this designated Critical</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6</th>
<th>LOCAL PARTNERS &amp; INFRASTRUCTURE ACCESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>• MoU with German geothermal operator</td>
<td></td>
</tr>
<tr>
<td>• Allows for access to producing wells to advance pilot processing.</td>
<td></td>
</tr>
<tr>
<td>• Potential for fast-track to production from existing</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>7</th>
<th>THE RIGHT TEAM FOR THE JOB</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Expert multi-disciplinary team local to project area in Germany.</td>
<td></td>
</tr>
<tr>
<td>• Decades of experience in developing &amp; permitting geothermal brine projects.</td>
<td></td>
</tr>
<tr>
<td>• International project finance, lithium market &amp; direct lithium extraction processing expertise</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>8</th>
<th>RAPIDLY ADVANCING LITHIUM PROJECT</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Maiden Resource &amp; Scoping Study completed in just five months.</td>
<td></td>
</tr>
<tr>
<td>• Pre-Feasibility Study Under Way.</td>
<td></td>
</tr>
<tr>
<td>• Targeting short-term production start in line with lithium supply-demand inflection point.</td>
<td></td>
</tr>
</tbody>
</table>
Thank you

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Appendix 1: proud members of a leading-edge industry
### Appendix 2: information for slide 16

<table>
<thead>
<tr>
<th>Company</th>
<th>Code</th>
<th>Project</th>
<th>Stage</th>
<th>Resource Category</th>
<th>Brine M3/Resource Tonnes</th>
<th>Resource Grade (Li2O)</th>
<th>Contained LCE Tonnes</th>
<th>Information Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lithium Americas</td>
<td>NYSE:LAC</td>
<td>Cauchari-Olaroz, Chile (50% ownership. Thacker Pass not Included)</td>
<td>Construction</td>
<td>Measured, Indicated &amp; Inferred</td>
<td>7.8 x 109 M³</td>
<td>592 mg/l Li</td>
<td>24.6</td>
<td>Resource Statement 7 May 2019</td>
</tr>
<tr>
<td>AVZ Minerals Ltd.</td>
<td>ASX:AVZ</td>
<td>Manobo (60% ownership)</td>
<td>Development</td>
<td>Measured, Indicated &amp; Inferred</td>
<td>400 Mt</td>
<td>1.65% Li2O</td>
<td>16.3</td>
<td>Company Presentation “Australia 2020”</td>
</tr>
<tr>
<td>Galaxy Resources Ltd.</td>
<td>ASX:GXY</td>
<td>Sal de Vida (Mt Cattlin not included)</td>
<td>Development</td>
<td>Measured, Indicated &amp; Inferred</td>
<td>18.1 x 108 M³</td>
<td>753 mg/l Li</td>
<td>7.2</td>
<td>Feasibility Study Report August 2016</td>
</tr>
<tr>
<td>Pilbara Minerals Ltd.</td>
<td>ASX:PLS</td>
<td>Pilgangoora</td>
<td>Production</td>
<td>Measured, Indicated &amp; Inferred</td>
<td>223.2 Mt</td>
<td>1.27% Li2O</td>
<td>6.9</td>
<td>Resource Statement 30 June 2019</td>
</tr>
<tr>
<td>Orocobre Ltd.</td>
<td>ASX:ORE</td>
<td>Salar de Olaroz</td>
<td>Production</td>
<td>Measured &amp; Indicated</td>
<td>1.8 x 109 M³</td>
<td>690 mg/l Li</td>
<td>6.4</td>
<td>Company Presentation 5 May 2014</td>
</tr>
<tr>
<td>European Metals</td>
<td>ASX:EMH</td>
<td>Cinovec</td>
<td>PFS Complete</td>
<td>Indicated &amp; Inferred</td>
<td>695.9</td>
<td>0.42</td>
<td>7.17</td>
<td>Corporate Presentation Released 20 November 2018</td>
</tr>
<tr>
<td>Rio Tinto</td>
<td>ASX:RIO</td>
<td>Jadar</td>
<td>PFS Underway</td>
<td>Indicated &amp; Inferred</td>
<td>135.7</td>
<td>1.86</td>
<td>6.24</td>
<td>Corporate Presentation Released 21 March 2018</td>
</tr>
<tr>
<td>Infinity Lithium</td>
<td>ASX:INF</td>
<td>San Jose</td>
<td>PFS Complete</td>
<td>Indicated &amp; Inferred</td>
<td>111.3</td>
<td>0.61</td>
<td>1.68</td>
<td>ASX Announcement Released 21 March 2018</td>
</tr>
<tr>
<td>Savannah Resources</td>
<td>AIM: SAV</td>
<td>Barroso</td>
<td>DFS Underway</td>
<td>Measured, Indicated &amp; Inferred</td>
<td>27.0</td>
<td>1.00</td>
<td>0.71</td>
<td>Corporate Presentation Released May 2019</td>
</tr>
<tr>
<td>European Lithium</td>
<td>ASX:EUR</td>
<td>Wolfsburg</td>
<td>PFS Complete</td>
<td>Measured, Indicated &amp; Inferred</td>
<td>10.98</td>
<td>1.00</td>
<td>0.27</td>
<td>Corporate Presentation Released May 2019</td>
</tr>
</tbody>
</table>

The Company is not aware of any new information or data that materially affects the information contained in the above sources or the data contained in this announcement.
### Appendix 3: information for slides 20

<table>
<thead>
<tr>
<th>Company</th>
<th>Project</th>
<th>Stage</th>
<th>Resource Category</th>
<th>Brine Volume (km³)</th>
<th>Resource Grade</th>
<th>Contained LCE Tonnes</th>
<th>Information Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Controlled Thermal Resources</td>
<td>Hell's Kitchen</td>
<td>PEA Complete</td>
<td>Inferred</td>
<td>Unknown</td>
<td>181 mg/l Li</td>
<td>2.7</td>
<td>Company Website</td>
</tr>
<tr>
<td>Standard Lithium</td>
<td>LANXESS (Joint Venture)</td>
<td>PEA Complete</td>
<td>Indicated</td>
<td>3.5</td>
<td>168 mg/l Li</td>
<td>3.1</td>
<td>PEA 2019*</td>
</tr>
</tbody>
</table>

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*Note: refers to LANXESS Indicated Resource only, 70/30 JV in favor of Lanxess AG with an option for Standard Lithium to achieve 40% subject to attaining certain milestones, does not include separate Tetra Project Inferred Resource.

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Appendix 4: Time to market

- Maiden JORC Resource & MoU Agreement with German Plant Operator
- Scoping Study & LCA Completion
- PFS
- DFS
- Permitting, Financing, Construction
- Staged Commercial Operation

Timeline:
- 2020
- 2021
- 2022
- 2023-2024
Appendix 5: decarbonisation potential calculations

Decarbonisation potential for Zero Carbon Lithium process:
Based on 50 kWh average lithium-ion battery size, with average of 0.9 kg LCE/kWh across different cathode chemistries. Total 1.4B vehicles in use worldwide (carsguide.com.au), 308m vehicles in Europe (acea.be), and 415 GWh of lithium-ion battery cell production in Europe, mostly for EVs, by 2029 (Benchmark Mineral Intelligence).
Carbon footprint per tonne of LiOH production from hard-rock mining calculated as 15t CO₂ per tonne LiOH (The CO₂ Impact of the 2020s Battery Quality Lithium Hydroxide Supply Chain, Minviro Ltd.)

6 million tonnes
For EU lithium annual demand by 2028 – potential footprint of lithium production
Equivalent to annual emissions of Cyprus

231 million tonnes
Full electrification of EU cars – potential footprint of lithium production
Equivalent to annual emissions of Spain

1.05 billion tonnes
Full electrification of world cars – potential footprint of lithium production
Equivalent to annual emissions of France, Italy, UK combined.
Appendix 6: aligned with UN Sustainable Development Goals

- Gender equality
- Affordable and clean energy
- Decent work and economic growth
- Industry, innovation and infrastructure
- Sustainable cities and communities
- Responsible consumption and production
- Climate action
Thank you

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